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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,160	10/02/2003	Kouichi Ichimura	04329.3156	6698
22852 7590 06/27/2007 FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER SANGHAVI, HEMANG	
			ART UNIT 2874	PAPER NUMBER
			MAIL DATE 06/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/676,160	Applicant(s) ICHIMURA ET AL.	
	Examiner Hemang Sanghavi	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>05/17/07; 09/23/04; 10/02/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

The prior art documents submitted by Applicant(s) in the Information Disclosure Statement(s) filed on 10/02/2003; 09/23/2004; and 05/17/2007 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims are indefinite and unclear which render the scope of the claims unascertainable.

In lines 2-3 of claim 1, the parentheses around the limitations "i= 1, 2, 3.....more" needs to be deleted in order for the limitations to be considered part of the claim. Similarly parentheses around the limitations appearing throughout claims 1 and 12 should be deleted.

In lines 6-8 of claim1, the phrase "one of the plurality of physical systems having at least three energy levels of a first level, a second level and a third level viewed from

Art Unit: 2874

the lower level" is indefinite and unclear. The physical system would not have energy levels unless it is irradiated with pulsed light and in terms of viewing the energy levels from the lower level is unclear. Claim 1 further defines different physical systems at different states, however it appears that applicant intend to claim at least one of the physical system being irradiated with different pulses to produce desired energy levels. Also, it is unclear as to how claimed angular frequencies are generated. Also, the specification does not provide antecedent basis to the term "physical system".

Claim 1 recites the limitation "the lower level" in lines 6-7. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 includes n numbers of ensembles including optical elements, however, all the ensembles refer to transmit the first photon or the second photon. Applicant must clearly set forth the photon transmission by consecutive labeling first, second, third, fourth, etc. for each ensemble.

Applicant must point out clear relationships of elements as the scope of the claims are unascertainable due to similar terms being used for each ensemble and physical systems in the claims and it is unclear as to how each elements are related.

In claim 2 of claim 3, "of" should be changed to ---including----

In claims 4 and 13, it is unclear as to what does applicant meant by the phrase "the angular frequency ω_3 being used as the coherent pulsed light of the angular frequency ω_1 and the coherent pulsed light of the angular frequency ω_2 ".

In line 3 of claim 5, there is no antecedent basis to the term "the single light source".

In claim 12, it is unclear as to what applicant meant by performing a q-th stage operation, since q-th stage is not defined.

Claims 3 and 6-11 are necessarily rejected, since these claims directly or indirectly depend upon the rejected base claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hemang Sanghavi whose telephone number is (571) 272-9955. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Hemang Sanghavi

Application/Control Number: 10/676,160

Page 5

Art Unit: 2874

Primary Examiner
Art Unit 2874

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